

REMARKS

Claims 11-15 are now pending in the application. Claim 11 has been amended by this Preliminary Amendment. The amendment to claim 11 is supported by page 14, lines 20-21 of the present specification. Allowance of the application is respectfully requested in view of the amendments and remarks contained herein.

In the office action prior to the filing of this RCE, the Examiner had rejected the claims as being unpatentable over Kawashima (U.S. Pat. No. 6,294,870) in view of Seki (U.S. Pat. No. 6,084,352) in further view of Shimizu (U.S. Pat. No. 5,996,250). Applicants have carefully reviewed the cited references and believe that the Examiner may have misunderstood the temperature focus region. Accordingly a further explanation of this point is provided below. Reference may be had to the accompanying Figures A and B, attached hereto.

Figure A illustrates an embodiment of the Applicants' invention and Figure B illustrates a lamp according to the Seki design. As shown in Fig. A, the entire discharge lamp is provided in the focal point of the reflective mirror. In Fig. B, a portion of the discharge lamp extends beyond the focal point of the reflecting mirror. Because the luminous bulb of the discharge lamp lies within the focal point (such that light from the luminous bulb is emitted in a direction forward of the reflecting mirror), perhaps the Examiner has considered this to be the temperature focus region.

However, the temperature focus region in the present invention refers to a region in which the temperature is increased due to the *light reflecting back from the color foil*, and the applicants of the present invention are the first to recognize this temperature focus region. This region is different from the luminous bulb region in which the

temperature is the highest. Although the light is being reflected back from the color foil, the reflected light may not be concentrated at the focal point (the position of the luminous bulb). The position of the temperature focus region depends on the shape and position of the color foil, and may not be located at a region within the reflecting mirror or at the discharge lamp. In other words, the position of the temperature focus region is not restricted to within the entire discharge lamp having a reflecting mirror.

Since the applicants of the present invention are the first to recognize that the temperature focus region is located at a region other than the luminous bulb, the present invention recites the connection portion where the external lead and the metal foil are connected is provided in a position outside the temperature focus region.

The temperature focus region of the present invention can be further explained with reference to the attached Fig. A.

The light emitted from the luminous bulb 100 is reflected by the reflecting mirror 60 and travel away from the luminous bulb as light 51. The light 51 is irradiated on the color foil 70 and the color foil 70 reflects part of the light 51 to irradiate back to the reflecting mirror 60 as light 52. The light 52 is again reflected by the reflecting mirror 60 and thereby increasing the temperature on the sealing portion 120 of the discharge lamp and forming the temperature focus region. According to the shape and position of the color foil 70 in the optical system illustrated in Fig. A, the temperature focus region is located at one end of the sealing portion 120. However, the position of the temperature focus region will change if the shape and/or position of the color foil 70 is being changed.

The temperature distribution in the discharge lamp is shown on the bottom right of Fig. A such that the temperature HT at the luminous bulb 100 region is the highest while the temperature TFR of the temperature focus region at the sealing portion 120 is the second highest.

Next, Fig. B is used to explain the case where the length of the sealing portion 120 disclosed in cited reference Seki is increased.

According to Seki, the length of the sealing portion 120 is increased such that the molybdenum foil, which is exposed to the air around the end portion of the sealing portion 120, is sufficiently apart from the high temperature HT of the luminous bulb 100 and will not be oxidized.

In this case, if the temperature distribution of the discharge lamp is as illustrated on the bottom right of Fig. B, the oxidization of the molybdenum foil can be prevented when the end portion of the sealing portion 120 is provided at X or Z. However, the molybdenum foil will be oxidized if it is provided at Y, hence the temperature focus region TFR. This is because even though position Y is further away from the luminous bulb 100 than Z, the temperature at Y is higher than at Z. Seki and the other cited references fail to disclose about the above.

Hence, having an extended-length sealing portion 120, such as in Seki, the sealing portion is exposed to the TFR region and the temperature at the end portion may be high. However the present invention has taken this into account and included a novel feature of providing the connection portion where the external lead and the metal foil are connected in a position outside the temperature focus region.

REQUEST FOR TELEPHONIC INTERVIEW

The Applicants have requested the Applicants attorney to conduct a brief telephonic interview with the Examiner to explain the temperature focus region. These written remarks and Figures A and B are being provided in advance of that interview, to assist the Examiner in understanding the Applicants' position and expedite the interview process. If after reviewing the foregoing, the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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